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May 10, 2002

Terence A. Dixon, Esq.
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RE: ZonePerfect Nutrition Bars and ZonePerfect Web Site

Dear Terry:

Thank you for your response to my February 25, 2002 letter. We appreciate the cooperative intent expressed in your letter.

We do, however, continue to be seriously concerned with the continued sale, and offer for sale, of ZonePerfect bars bearing Dr. Sears's name. In fact, it recently came to my attention that a new natural food store, Alda Right Foods, has opened in Toronto, and has an extremely large display (thousands of bars in hundreds of boxes) of ZonePerfect bars bearing Dr. Sears's name, as do GNC stores in Toronto and other areas. The inventory phase-out period set forth in the Agreement ended long ago, and the continued sales of inventory bearing Dr. Sears's name should have ended more than six months ago. We are perplexed that bars sold by ZonePerfect prior to October 1, 2001 are still sitting on shelves in April 2002, more than six months after the end of the phase-out period. We are concerned that ZonePerfect is dumping excess inventory of ZonePerfect bars in Canada and elsewhere. Would you please confirm in writing that your client ceased all shipments of bars bearing Dr. Sears's name and likeness before the phase-out period ended.

I appreciate the steps that you indicate will be taken to contact CVS with a forceful request to cease advertising and selling inventory bearing Dr. Sears's name and likeness. I would ask that the same forceful request to immediately cease be made to any retailer of ZonePerfect that continues to advertise and sell bars with wrappers and/or display materials bearing Dr. Sears's name and likeness.

As to the infringement of Dr. Sears's copyright, in my letter I identified a few instances of existing copying. There are others, and we direct your attention to the attached additional side-by-side comparisons of Dr. Sears's text from his book "The Anti-Aging Zone" and Dr. Johnston's rote copying or paraphrasing thereof, which appears in his "Inside the Zone: Features" column. Fair use is not really colorable here. While we appreciate your statement of your client's willingness to remove or modify the content of infringing articles, we are requesting a more proactive and comprehensive effort by your client to remove all infringing

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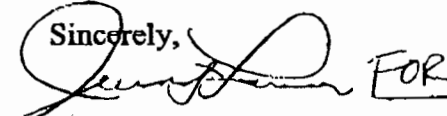
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content of articles, including those referenced in this letter, and to assure that new examples of infringement do not occur in the future. As each of Dr. Johnston's articles has been copied from Dr. Sears's books, we suggest that the most appropriate response would be to remove such articles from the <zoneperfect.com> web site.

As to the "Today's Question" that you address in your letter, please note that ZonePerfect's claim that it is the "official site" of the Zone Diet is causing confusion not only to "Beth C.," but also to others. We direct your attention to the attached "Ask Dr. Sears" e-mail, from July 2001, that is further evidence of actual confusion caused by ZonePerfect's statements.

As to your concern about Dr. Sears's response to the "Ask Dr. Sears" question posed by "Beth C.," we do not agree that Dr. Sears's response is "replete with inaccuracies and is highly misleading." In fact, ZonePerfect is not "the official site of the Zone Diet." It is a true statement that Dr. Sears "considers" drsears.com to be the site as described by him. It is a true statement that Dr. Sears invented the Zone Diet and continues to refine and define it. It also is a true statement that the OmegaZone™ bar bearing Dr. Sears's name is "based on [his] newest patented technology to control elevated insulin levels" and that the OmegaZone™ is the only nutrition bar that Dr. Sears recommends. It is indeed true that the parties split up in separate premises on December 31, 1998, reflecting a major change in the relationship, and that Dr. Sears's employment terminated as of that date. Finally, it is true that Dr. Sears did not have anything to do with the development of the Zone meals (i.e., ZonePerfect Fresh Food Delivery Service) that are referred to in the e-mail exchange with "Beth C." and that Dr. Sears does not recommend them.

We look forward to your client's response to the continuing concerns expressed in this letter.

Sincerely,

Stephen A. Hurwitz

Enclosures
cc: Thomas E. Neely, Esq.
Barry D. Sears, Ph.D.
Douglas K. Sears

NOTE: Barry Sears's text appears in bold; Dr. Johnston's appears in regular text. Words in italics are Dr. Sears's quotes *verbatim*.

The following article was copied from the ZonePerfect website:

Home > Inside the Zone: Features > The Age Free Zone

What About Anti-Aging Zone Supplements?

by Dr. Robert Wayne Johnston

What role do Anti-Aging Zone supplements play in slowing deterioration from aging? Dr. Barry Sears says they have a very important place *only if you have established a sound balanced foundation of hormones, namely insulin and glucagon, through the consistent application of the Anti-Aging Zone Lifestyle Pyramid.*

BS pg. 269AAZ: Do supplements have a place in reversing the aging process? Yes, they do but *only if they are used after you have established a proper foundation through the consistent application of the Anti-Aging Zone Pyramid.*

[Photocopy of AntiAging Pyramid picture from Barry's Book]

(For more on the Pyramid see page 114 in Dr. Sears' book The Anti-Aging Zone). Keeping that important caveat in mind, the supplements in question include *hormone replacement by either prescription or over-the-counter sales, vitamins and minerals that are used in hormone synthesis, and finally, herbs that have hormonal effects.*

BS pg. 269: They include *hormone replacement either by prescription or over-the-counter sales. They also include vitamins and minerals that have utility in hormone synthesis. And finally they include herbs that have hormonal effects.*

My columns on the subject of Anti-Aging Zone Supplements, scheduled intermittently over the coming months, are organized as follows: Part One: Most Powerful Hormones; Part Two: Over-the-Counter Hormones; Part Three: Vitamins and Minerals; and Part Four: Herbs.

Part One. Most Powerful Hormones

Let's start our exploration with a look at the most powerful supplements, the hormones that require a prescription: estrogen and progesterone, thyroid and cortisol, growth hormone, and testosterone.

BS pg. 269: *Let's start with the most powerful supplements, hormones, especially the hormones that require a prescription.*

Estrogen and Progesterone. *Estrogens are rarely prescribed by physicians without the simultaneous intake of progesterone, not only to reduce the likelihood of breast cancer, but also to increase the building of bone density.*

BS pg. 270: *Estrogens, however, are rarely given without the simultaneous intake of progesterone, not only to reduce the likelihood of breast cancer but also increase the building of bone density.*

Finding the right amount and type of natural estrogen is difficult, but you increase the complexity to much a greater degree when you add progesterone to your hormonal mix. This complexity is because progesterone can also increase insulin resistance, one of the universal markers of aging.

BS pg. 270: *If you think finding the right amount and type of natural estrogen is difficult, you increase the complexity to a much greater degree when you add progesterone to your hormonal mix. Remember that progesterone can also increase insulin resistance.*

The key to determining the right balance of estrogen and progesterone requires listening to your body and communicating that information to a knowledgeable physician who, equally importantly, takes the time to listen to you.

BS pg. 271: *As you can quickly see, the key to determining the right balance of estrogen and progesterone requires listening to your body and then communicating that information to a knowledgeable physician (who also takes the time to listen) so that you can both work as a team...*

Thyroid and Cortisol. *Very likely, some older people will need both thyroid and cortisol replacement simultaneously. That may seem contradictory in light of the fact that excess cortisol is one of the pillars of aging. Actually, it isn't a contradiction. Lack of cortisol (especially in the face of increased metabolism) will also increase the rate of aging because it lowers the ability to respond to stress.*

BS pg. 271: *It is very likely that some patients will need both thyroid and cortisol replacement simultaneously. Isn't that contradictory if excess cortisol is one of the pillars of aging? No, because lack of cortisol (especially in the face of increased metabolism) will also increase the rate of aging because it lowers the ability to respond to stress.*

Although the relative outputs of thyroid and cortisol are best determined by a 24-hour urine collection, in the final analysis how you feel will determine the amounts and ratio of thyroid and cortisol (if required). Again, it comes back to listening to your body, recording the information, and finding a knowledgeable physician to work with you to fine-tune your hormonal supplementation program.

BS pg. 271-272: *Although, the relative outputs of thyroid and cortisol are best determined by a 24-hour urine collection (to average out the different outputs of cortisol caused by circadian rhythms), in the final analysis how you feel will determine the amounts and ratio of thyroid and cortisol (if required). Again, it comes back to listening to your body, recording the information, and finding a knowledgeable physician to work with you to fine-tune your hormonal supplementation program.*

Growth Hormone is a powerful biochemical that appears to reverse many of the signs of aging. It must, however, be given by injection. The goal of growth hormone injections is to

raise current body levels of the hormone to a concentration consistent with the levels found in early adulthood.

BS pg. 272: *As mentioned earlier, it is a powerful hormone that appears to reverse many of the signs of aging. Unfortunately, it must be given by injection. The actual goal of growth hormone injections is to raise IGF-1 levels to a concentration consistent with the levels found in early adulthood*

Growth hormone has its own array of side effects, including the development of insulin resistance resulting in an increase in insulin levels . . . hardly the thing you want to have happen to your body if anti-deterioration from aging is your goal.

BS pg. 272: *However, growth hormone has its own array of side effects, including the development of insulin resistance and thus an increase in insulin levels. And that is the last thing you want to have happen if anti-aging is your goal.*

Unless you are controlling insulin by the Anti-Aging Zone Pyramid, Dr. Sears believes many of the benefits of growth hormone replacement therapy will be minimized on a long-term basis.

BS pg. 272: *Unless you are controlling insulin by the Zone Diet, I believe many of the benefits of growth hormone replacement therapy will be minimized on a long-term basis.*

Conversely, the more insulin is controlled by the Anti-Aging Zone Pyramid, the lower the dose of growth hormone needed to realize its full potential benefit as an anti-aging supplement. "If you aren't controlling insulin," as he says, "you may be spitting into the wind if you are taking growth hormone injections."

BS pg. 272-273: *Conversely, the more insulin is controlled by the Zone Diet, the lower the dose of growth hormone needed to realize its full potential benefit as an anti-aging supplement. If you aren't controlling insulin, then you may be spitting into the wind if you are taking growth hormone injections.*

Testosterone increases libido in both males and females, and it appears to decrease the likelihood of heart attacks and osteoporosis in males. It requires injections or implants and, unless you are controlling your insulin, testosterone injections may be self-defeating over the long term.

BS pg. 273: *It increases libido in both males and females, and it appears to decrease the likelihood of heart attacks and osteoporosis in males. Like growth hormone, testosterone requires injections or implants; like growth hormone, unless you are controlling insulin, testosterone injections may be self-defeating on a long-term basis.*

The more insulin you produce, the greater the accumulation of stored body fat. It is stored body fat that contains the enzyme that converts testosterone into estrogen. It is not just testosterone levels that count, but the ratio of testosterone to estrogen that should be maximized in males.

BS pg. 273: *The more insulin you produce, the greater the accumulation of stored body fat. It is that stored body fat that contains the enzyme that converts testosterone into estrogen. It is not just testosterone levels that count, but the ratio of testosterone to estrogen that should be maximized in males.*

The only way to reduce estrogen formation is to reduce excess body fat, which can only be achieved by lowering insulin . . . that requires the Anti-Aging Zone Nutrition regimen.

BS pg. 273: *The only way to reduce estrogen formation is to reduce excess body fat. That can only be achieved by lowering insulin. And that requires the Zone Diet.*

To summarize, all of the above-described hormone replacement therapies require a prescription and a knowledgeable physician to constantly monitor your progress. Each of these are life-long hormonal supplementation programs.

BS pg. 273: *All of the above hormone replacement therapies require a prescription and hopefully a knowledgeable physician to constantly monitor your progress. Make no mistake about it, each of these are life-long hormonal supplementation programs.*

In my next installment of this four-part series on Anti-Aging Zone Supplements, we will explore Over-the-Counter Hormones.

This overview was adapted from material in Dr. Barry Sears' book *The Anti-Aging Zone*, Chapter 26, by Robert Wayne Johnston - OmniMind Associates . . . for more enjoyable aging
What did you think of this article?

Send your comments and questions to: AgeFreeZone@ZonePerfect.Com

Related Links: Learn more about the ZonePerfect Quick Start Kit.

You may order this special video and Quick Start Kit using our store or by calling 1-800-390-6690 and ask to speak to a Zone Associate.

Part Two: Hormones Available Over-The-Counter
By Dr. Wayne Johnston

What role do Anti-Aging Zone supplements play in slowing deterioration from aging? Dr. Barry Sears says they have a very important place only if you have established a sound balanced foundation of hormones, namely insulin and glucagon, through the consistent application of the Anti-Aging Zone Lifestyle Pyramid.

BS pg. 269AAZ: *Do supplements have a place in reversing the aging process? Yes, they do but only if they are used after you have established a proper foundation through the consistent application of the Anti-Aging Zone Pyramid.*

[Photocopy of AntiAging Pyramid picture from Barry's Book]

Keeping that important caveat in mind, the supplements in question include *hormone replacement by either prescription or over-the-counter sales, vitamins and minerals that are used in hormone synthesis, and finally, herbs that have hormonal effects.*

BS pg. 269: *They include hormone replacement either by prescription or over-the-counter sales. They also include vitamins and minerals that have utility in hormone synthesis. And finally they include herbs that have hormonal effects.*

Scheduled intermittently over the coming months, my columns on the subject of Anti-Aging Zone Supplements are organized as follows: Part One: Most Powerful Hormones; Part Two: Hormones Available Over-the-Counter; Part Three: Vitamins and Minerals; and Part Four: Herbs.

Part Two: Hormones Available Over-the-Counter

In my first column we explored anti-aging hormone supplements obtainable only with a physician's prescription.

So what hormone supplements are available without a prescription? Usually you can find the following hormones over-the-counter at health food stores: DHEA, melatonin, pregnenolone, androstenedione and 5-hydroxytryptophan.

Since there is no physician to act as a knowledgeable intermediary between you and these hormones, you're on your own. As Dr. Barry Sears says, "If you are going to experiment with your body (and nothing is wrong with that if you are willing to accept the consequences), then there is one basic guideline: never take any more of an over-the-counter hormone than your body normally makes."

BS pg. 274: *Since there is no physician to act as an intermediary between you and these hormones, you're on your own. If you are going to experiment with your body (and nothing is wrong with that if you are willing to accept the consequences), then there is one basic guideline: never take any more of an over the counter hormone than your body normally makes.*

DHEA. As you may know, *over-the counter sales of DHEA represent at least one-half of the largest uncontrolled human experiment in the history of hormonal replacement. And interestingly -- no one seems to care.* So where does that put you? Clearly at the controls, ingesting at your own risk.

BS pg. 273-274: *The over-the-counter sales of DHEA and melatonin represent the largest uncontrolled human experiment in the history of hormonal replacement and no one seems to care.*

To underscore the rule-of-thumb stated above, there is one basic guideline: never take any more of the hormone DHEA than your body normally produces . . . that's about 25mg of DHEA over a twenty-four hour period. It can be quite a challenge, both in time and effort, to simulate the natural release of DHEA from the adrenal gland.

"If you plan to play endocrinologist at home," advises Dr. Sears, "then plan to take that 25 mg divided into various doses taken five times a day with most of it (about 10mg) coming early in the morning and decreasing amounts throughout the day to simulate the natural release of DHEA from the adrenal gland. That's pretty hard work, but if [you] want to play the game, then play it right."

BS pg.274 : *If you want to play endocrinologist at home, then plan to take that 25 mg divided into various doses taken five times a day with most of it (about 10mg) coming early in the morning and decreasing amounts throughout the day to simulate the natural release of DHEA from the adrenal gland. That's pretty hard work, but if [you] want to play the game, then play it right.*

Melatonin represents the other half of the largest uncontrolled human experiment in the history of hormonal replacement. Again, as with DHEA, you are clearly responsible and accountable for your decision to use melatonin and any consequences emanating therefrom.

Melatonin is secreted only at night throughout the sleep cycle. Since neither waking up every few hours to take your next dose nor taking melatonin during the day make a lot of sense, your best option is to find sustained release tablets that slowly release melatonin during sleep.

BS pg. 274: *Melatonin, on the other hand, is only secreted at night throughout the sleep cycle. Waking up every few hours to take your next dose doesn't make a lot of sense. The best approach is to find sustained release tablets that slowly release melatonin during sleep. (Here is an obvious pointer—don't take melatonin during the day.)*

How much should you take? Although it appears very safe, in England, Canada, and France melatonin requires a physician's prescription. If you are not working with a physician to monitor your blood levels, Dr. Sears suggests, "Plan to take no more than 1 mg of sustained release melatonin right at bedtime."

BS pg. 274: *The next question is how much to take? Melatonin appears to be very safe, even though it is banned from over-the-counter sale in England, Canada, and France—and you need a physician's prescription to obtain it. If you are not working with a physician to monitor your blood levels, plan to take no more than 1 mg of sustained release melatonin right at bedtime.*

Additional Hormone-Altering Supplements

Still other Anti-Aging Zone supplements you can buy at many health food stores to alter your hormones include: pregnenolone, androstenedione and 5-hydroxytryptophan.

Pregnenolone is the steroid hormone that is the precursor to DHEA, but it is also the precursor to progesterone. Pregnenolone is not a good idea if you are male, because excess progesterone can cause insulin resistance which can lead to erectile dysfunction. Pregnenolone is also a precursor to cortisol, too much of which can damage body tissue -- not a good idea for either gender. Dr. Sears describes pregnenolone as, "... the hormonal version of Wheel of Fortune at the health food store."

BS pg. 274: *The first is pregnenolone. This is the steroid hormone that is the precursor to DHEA. But if you remember, it is also the precursor to progesterone (not a good idea if you are male) and cortisol (which may not be a good idea for either sex). Which of these three pathways pregnenolone will lead to is anyone's guess. It's the hormonal version of Wheel of Fortune at the health food store.*

Androstenedione is considered another potential powder keg because it is the immediate precursor to testosterone. As you may recall from reading Part One of this series on anti-aging supplements, testosterone is so potentially dangerous that it requires a prescription from a physician. Dr. Sears says, "Taking androstenedione is playing Russian roulette unless you are monitoring your blood levels of testosterone to make sure you are not taking an overdose."

BS pg. 275: *Androstenedione is another potential powder keg. Androstenedione is the immediate precursor to testosterone. There is a good reason why testosterone is a prescription drug—it's potentially dangerous. Taking androstenedione is playing Russian roulette unless you are monitoring your blood levels of testosterone to make sure you are not taking an overdose.*

5-hydroxytryptophan is the immediate precursor to serotonin. Excess serotonin in the bloodstream can increase platelet aggregation, giving rise to a heart attack -- obviously not a good thing in any circumstance, let alone an anti-aging program. In addition, long term buildup of serotonin in the central nervous system increases the production of excess insulin by decreasing dopamine levels -- another unhealthful condition you probably don't want if you want to slow your body's deterioration from aging.

BS pg. 275: *The third is 5-hydroxytryptophan, which is the immediate precursor to serotonin. Excess serotonin in the bloodstream can increase platelet aggregation, giving rise to a heart attack (not a good thing in any anti-aging program). In addition, long-term buildup of serotonin in the central nervous system increases the production of excess insulin by decreasing dopamine levels.*

To summarize, the goal of anti-aging is to use the minimum amount of administered hormones to maximize quality of life by improving hormonal balance. Just as one needs a firm foundation on which to build a house, so one needs a firm hormonal foundation on which to build her or his continuing health and full functioning. The Anti-Aging Zone Lifestyle Pyramid provides that foundation.

All of the above-described Anti-Aging Zone supplements in the form of hormones are available over-the-counter, hence consumed at your own risk. A usually reliable rule-of-thumb is to never ingest more of an over-the-counter hormone than your body normally produces. As a wise older adult you probably know, as with any other over-the-counter remedy, when in doubt check first with your physician.

In Part Three of this four-phase series on Anti-Aging Zone Supplements we will explore vitamins and minerals.

The material for this overview was adapted from Dr. Barry Sears' book *The Anti-Aging Zone* (now titled *The Age-Free Zone*)
by Robert Wayne Johnston - OmniMind Associates . . . for more enjoyable aging.

Part Three: Vitamins and Minerals by Dr. Robert Wayne Johnston

What role do Anti-Aging Zone supplements play in slowing deterioration from aging? Dr. Barry Sears says they have a very important place *only if you have established a sound balanced foundation of hormones, namely insulin and glucagon, through the consistent application of the Anti-Aging Zone Lifestyle Pyramid.*

BS pg. 269 AAZ: *Do supplements have a place in reversing the aging process? Yes, they do but only if they are used after you have established a proper foundation through the consistent application of the Anti-Aging Zone Pyramid.*

[Photocopy of AntiAging Pyramid picture from Barry's Book]

(For more on the Pyramid see page 114 in Dr. Sears' book The Anti-Aging Zone).

Keeping that important caveat in mind, the supplements in question include *hormone replacement by either prescription or over-the-counter sales, vitamins and minerals that are used in hormone synthesis, and finally, herbs that have hormonal effects.*

BS pg. 269: *They include hormone replacement either by prescription or over-the-counter sales. They also include vitamins and minerals that have utility in hormone synthesis. And finally they include herbs that have hormonal effects.*

My columns on the subject of Anti-Aging Zone Supplements are organized as follows: Part One: Most Powerful Hormones; Part Two: Over-the-Counter Hormones; Part Three: Vitamins and Minerals; and Part Four: Herbs.

What About Anti-Aging Zone Supplements

Part Three: Vitamins and Minerals

Even before becoming 'confirmed Zoners' over four years ago, my wife, Millis, and I hauled out our trays of vitamins and minerals after virtually every meal. We realize now, however, that we weren't getting as much age-liberating mileage from our supplements before beginning our trip to the Zone.

"Vitamins and minerals are useful supplements," says Dr. Sears, "but without the Zone Age-Free Lifestyle Pyramid as your base, they will be relatively worthless in your effort to reverse the deteriorative effects of unhealthful aging."

BS pg. 277: *Vitamins and minerals are useful supplements, but without the Anti-aging Zone Lifestyle Pyramid as your base, they will be relatively worthless in your effort to reverse aging.*

Notice that the vitamins and minerals Dr. Barry Sears recommends are often considerably less than those commonly touted for slower deterioration from aging. This difference in consumption is because he assumes that you are already following the guidelines outlined in The Age-Free Zone Lifestyle Pyramid.

BS pg. 277: *Notice that the vitamins and minerals I am recommending are often considerably less than those commonly touted for anti-aging benefits. That is because I assume that you are already following the Anti-aging Zone Lifestyle Pyramid...*

Of course the question may arise, "Why do I need supplements at all if I'm following the Zone nutrition program?" Generally, the answer rests with the fact that it would be virtually impossible to eat the volume of the various foods necessary to get the appropriate vitamins and minerals. Supplements are the only practical way available to us for satisfying this need. In the following paragraphs I will explore the following: essential supplements, important supplements, "cheap insurance" supplements, and more expensive supplements, followed by a chart ranking the supplements and daily amounts of each suggested by Dr. Barry Sears. I've also included a brief on GLA supplements.

Essential Supplements

Omega-3 Fish Oil. *Of all the supplements, Dr. Sears' research shows that fish oil is the most important* because it contains the necessary ingredients -- omega-3 and EPA -- to keep your body in optimum hormonal balance. It is advisable that your fish oil be molecularly distilled so that it is free of harmful chemicals, such as herbicides, pesticides, and PCBs. Only if fish oil is molecularly distilled can you be sure the PCBs have been removed.

BS pg. 275: *Of all the supplements, the most important is fish oil, since it's rich in EPA, which will reduce AA formation and therefore help you make more "good" eicosanoids.*

What is EPA and why is it so important?

EPA is an Omega-3 activated fatty acid. Adequate intake of EPA helps maintain a better eicosanoid or "super hormone" balance. Specific benefits known to result from a more favorable eicosanoid balance are better blood pressure control, less tissue swelling & inflammation, enhanced blood flow to tissues, natural anti-coagulant properties, and reduced tendency toward reactive airway disease (asthma), and allergies.

Vitamin E. The next most important supplement is *natural vitamin E*. Natural vitamin E is much better than synthetic vitamin E *because it has more of the essential ingredient (isomers) than synthetic vitamin E*. How can you tell the difference? Look at the ingredients listed on the label on the bottle. If the label shows the ingredient "d-Alpha tocopherol" it's natural vitamin E . . . if the label reads "dl-Alpha tocopherol" it is synthetic. What a difference a 'l' makes, huh?

BS pg. 275: *Right behind supplemental fish oil is natural vitamin E (because it has more isomers than synthetic vitamin E).*

Important Supplements

The next group of supplements, namely vitamin C and magnesium, are important. However, if you are eating lots of fruits and vegetables, like people on the Zone nutrition program do, you should be getting adequate amounts.

BS pg. 276: *The next group of supplements (vitamin C and magnesium) are important, although if you are eating a lot of fruits and vegetables (as you do on the Zone Diet), you should be getting adequate amounts.*

As to magnesium, biochemist Sears says research studies show , "*... there is no more important mineral for cardiovascular health than magnesium.*" Enough said for now.

BS pg. 276: Magnesium is the critical mineral required for effective eicosanoid synthesis. In my opinion, *there is no more important mineral for cardiovascular health than magnesium.*

If you are a vegetarian, it is important that you ingest sufficient supplementary vitamin B12 for the reason that most vegetarian diets don't provide enough. This vitamin is especially important for older people wanting to rejuvenate their memory.

BS pg. 277: (*If you are a vegetarian, I would also strongly recommend taking B12 supplements.*)

Cheap Insurance Supplements

Next come the vitamins and minerals that are in Dr. Sears terms "cheap insurance policies." If you are following the Zone Diet, they are probably there in more than adequate levels, but if you want to assure yourself that you're getting enough, their supplementation is easy and relatively inexpensive.

BS pg. 277: *Next come the vitamins and minerals that I term "cheap insurance policies." If you are following the Zone Diet, they are probably there in more than adequate levels, but their supplementation is easy and relatively inexpensive.*

Vitamins B3 and B6. These vitamins are required for efficient hormonal balance.

BS pg. 277: *Vitamins B3 and B6 are required for efficient hormonal balance.*

Folic acid reduces the likelihood of heart attacks.

BS pg. 277: *Folic acid reduces any excess buildup of pro-inflammatory homocysteine, thereby reducing the likelihood of heart attacks.*

Beta carotene is a useful antioxidant once you have adequate levels of vitamin E and vitamin C in your body.

BS pg. 277: *Beta carotene is a useful (and cheap) antioxidant once you have adequate levels of vitamin E and vitamin C in your system.*

Calcium is useful in preventing osteoporosis.

BS pg. 277: *Calcium is useful in preventing osteoporosis (although 40% of bone mass is composed of magnesium).*

Selenium is important as part of an antioxidant enzyme as well as part of still another enzyme which is involved in an important biochemical conversion process.

BS pg. 277: Selenium is important not only as part of the antioxidant enzyme glutathione peroxidase but also for the enzyme that converts T4 to T3.

Zinc is important in hormonal synthesis and related biochemical processes.

Chromium. The last mineral in this category, chromium is important in lowering insulin levels.

BS pg. 277: Finally, in this category is chromium, which is important in lowering insulin levels by acting as...

More Expensive Supplements

Relatively new antioxidants that have shown significant promise in helping prevent cancer include CoQ10, Lycopene, Lutein, and Polyphenols. While more expensive than other supplements, they can help fill in your anti-oxidant defenses.

BS pg. 277: These are new antioxidants that have shown significant promise in reducing free radical formation. They are expensive, but they can fill in your anti-oxidant defenses.

Ranking of Nutritional Supplements (copied from pg. 276 AAZ, but different amounts)

<u>Type</u>	<u>Daily Amount</u>
<i>Essential</i>	
Molecular Distilled Fish oil	6 grams (about 1080 mg of EPA)
Natural Vitamin E	100-400 IU
<i>Important</i>	
Vitamin C	500-1000 mg
Magnesium	250-400 mg
Vitamin B12	50 mcg
<i>Cheap insurance</i>	
B3 (Niacin)	20 mg
B6	5-10 mg
Folic acid	500-1000mcg
Beta carotene	5,000 IU
Calcium	500-1000 mg
Chromium	200 mcg
Selenium	200 mcg
Zinc	15 mg
<i>Exotic, but expensive</i>	
CoQ10	5-10 mg
Lycopene	3-5 mg
Lutein	3-5 mg
Polyphenols	3-10 mg

What About GLA Supplementation?

How much GLA (gamma linoleic acid) should I be getting? Should I take some sort of supplement?

The only known sources of GLA are oatmeal and mother's milk. Eating a small cup of steel-cut oats (very slow cooking) four times a week is the easiest way of ensuring adequate GLA intake. As to mother's milk . . . I bet you know the answer to that option.

A Reminder

Vitamins and minerals are useful supplements, but without the Age-Free Zone Lifestyle Pyramid as your base, they will be of relatively little value in your effort to healthfully slow and/or reverse your body's deterioration from aging.

BS pg. 277: *Vitamins and minerals are useful supplements, but without the Anti-aging Zone Lifestyle Pyramid as your base, they will be relatively worthless in your effort to reverse aging.*

In my next column I will explore herbs as supplements to the Age-Free Zone Diet.

Most of the material in this overview was adapted from Dr. Barry Sears' books The Age-Free Zone (formerly the Anti-Aging Zone) and Zone Perfect Meals in Minutes.

Part Four, Herbs by Dr. Robert Wayne Johnston

What role do Anti-Aging Zone supplements play in slowing deterioration from aging? Dr. Sears says they have a very important place *only if you have established a sound balanced foundation of hormones through the consistent application of the Age-Free Zone Lifestyle Pyramid* (See page 114 in Dr. Sears' books The Age-Free Zone or The Anti-Aging Zone).

BS pg. 269 AAZ: Do supplements have a place in reversing the aging process? Yes, they do but *only if they are used after you have established a proper foundation through the consistent application of the Anti-Aging Zone Pyramid.*



[Photocopy of AntiAging Pyramid picture from Barry's Book]

Keeping that important caveat in mind, the supplements in question include hormone replacement either by prescription or over-the-counter sales. Also, vitamins and minerals that are used in hormone synthesis. And finally, herbs that have hormonal effects.

Scheduled intermittently over the coming months, my columns on the subject of Anti-Aging Zone Supplements are organized as follows: Part One: Most Powerful Hormones; Part Two: Over-the-Counter Hormones; Part Three: Vitamins and Minerals; Part Four: Herbs; and recently I added Part Five: Supplements Deserving Special Caveats.

What About Anti-Aging Zone Supplements?

Part Four: Herbs

Herbs are drugs, just in a more diluted form. Sixty years ago, virtually all drugs came from botanical sources. After all, plants have been engaged in chemical warfare for billions of years. "Just find the most successful warriors in that struggle," says biochemist Barry Sears, "isolate their active ingredients, purify them, and presto you have a drug. Even today, about 25 percent of all prescription pharmaceuticals still come from botanical sources because the active ingredients are too complex to be synthesized."

BS pg. 277-278: *Herbs are drugs, just in a more diluted form. Sixty years ago, virtually all drugs came from botanical sources. After all, plants have been engaged in chemical warfare for billions of years. Just find the most successful warriors in that struggle, isolate their active ingredients (usually an alkaloid), purify them, and presto you have a drug. Even today, about 25 percent of all prescription pharmaceuticals still come from botanical sources because the active ingredients are too complex to be synthesized.*

Herbs are relatively nontoxic due to a significant improvement in standardization procedures. Herbs are also unique because often the partially purified crude herb is more functional than any one of the isolated ingredients. Keep in mind, however, that herbs are drugs, so always consult your physician if you are taking any prescription medications.

BS pg. 278: *Herbs are relatively nontoxic due to a significant improvement in standardization procedures. Herbs are also unique because often the partially purified crude herb is more functional than any one of the isolated ingredients. However, keep in mind that herbs are drugs, so always consult your physician if you are taking any prescription medications.*

Some of the herbs that have potential for slowing and/or reversing aging because of their effects on hormonal systems include coleus forshohii, garlic, ginger, ginkgo, ginseng. Also, glycyrrhizin, guar gum, gugulipid, and genistein.

Coleus forshohii is probably the most interesting of these herbs because it contains an active ingredient named forskolin which enhances the production of other essential biochemicals. Dr. Sears says a good dosage of this herb might be 50 mg twice a day of a standardized 18 percent forskolin content.

BS pg. 278: *Probably the most interesting of these herbs is coleus forshohii because of its active ingredient, forskolin. A good dosage of this herb might be 50 mg twice a day of a standardized 18 percent forskolin content.*

Garlic is another herb that has considerable scientific support as an inhibitor of platelet aggregation. Since raw garlic can have some toxicity, cooked garlic is probably the best source, with a recommended dosage of two to three cloves per day -- plus it tastes rather good.

BS pg. 278-279: Garlic is another herb that has considerable scientific support. Since raw garlic can have some toxicity, cooked garlic is probably the best source with two to three cloves per day a recommended dosage—plus it tastes pretty good.

Garlic also has antibacterial benefits which come from another ingredient known as allicin. If you want to take pills to get the benefits of allicin, then plan to take about 1,000 mg per day.

BS pg. 279: Garlic's antibacterial benefits come from another ingredient known as allicin, which is more stable for processing. If you want to take pills to get the benefits of allicin, then plan to take about 1,000 mg per day.

Ginger is useful for inhibiting the eicosanoid hormones that affect slowing deterioration from aging. Ginger extracts are now appearing in health food stores -- about 100 mg per day is a good dose. Alternatively, like garlic, just add fresh ginger about 1 to 2 grams per day) to your foods.

BS pg. 279: Ginger extracts are only now appearing in health food stores, and about 100 mg per day is a good dose. Alternatively, like garlic, just add fresh ginger (about 1 to 2 grams per day) to your foods.

Ginkgo biloba extracts contain certain molecules that work together to inhibit a platelet activating factor, which is a powerful agent that promotes the clumping of platelets, especially in cerebral circulation. Used for improving mental function, ginkgo biloba maintains blood flow, thus supplying adequate amounts of oxygen for optimal brain function. Dr. Sears says controlled studies have indicated some potential for this herb to treat Alzheimer's disease. A good dosage would be 120 mg per day, but spread that throughout the day to maintain consistent blood levels.

BS pg. 279: Ginkgo biloba extracts contain certain terpene molecules know as ginkgolides that work together to inhibit platelet activating factor (PAF). PAF is a powerful agent that promotes the clumping of platelets, especially in the cerebral circulation. Used for improving mental function, it maintains blood flow, thus supplying adequate amounts of oxygen for optimal brain function. Controlled studies have indicated some potential for this herb to treat Alzheimer's disease. A good dosage would be 120 mg per day, but spread throughout the day to maintain consistent blood levels.

Ginseng appears to stimulate the release of a biochemical from the pituitary gland which stimulates the adrenal glands to make more cortisol, but also more endorphins (your body's natural opiates). This would make sense, for there are reported benefits in treating fatigue and adapting to stress if a person has low adrenal output.

Due to the stimulation elicited, it is best to use ginseng on an intermittent basis, and then give the body a 2- to 3-week recovery period before using it again. Unfortunately, strict standardization is not available for this herb. If you want to try ginseng, you may have to experiment with several brands to find one that works, but still give yourself a 2- to 3-week rest every 6 weeks.

BS pg.279-280: *Ginseng appears to stimulate the release of ACTH from the pituitary gland. ACTH stimulates the adrenal glands to make more cortisol, but also more endorphins (your body's natural opiates). This would make sense for its reported benefits in treating fatigue and adapting to stress (i.e. adaptogen) if a person has low adrenal output. Due to the stimulation of ACTH, it is best to use ginseng on an intermittent basis, and then give the body a 2- to 3-week recovery period before using it again. Unfortunately, strict standardization is not in place for this herb. If you want to try ginseng, you may have to experiment with several brands to find one that works, but still give yourself a 2- to 3-week rest every 6 weeks.*

Glycyrrhizin enhances cortisol action. *If you have adrenal insufficiency, according to Dr. Barry Sears, glycyrrhizin may be of use. Excess glycyrrhizin will have the same effects as excess cortisol production. It should only be used on a short-term basis for no more than 6 weeks, followed by 2 to 3 weeks of nonuse to ensure that natural cortisol production doesn't atrophy -- 25 mg per day is probably a good dose. It should be taken in uneven doses throughout the day with the largest doses in the morning (to mimic healthful cortisol output), a lower dose at noon, and the lowest dose in the early evening.*

BS pg. 280: *If you have adrenal insufficiency, then glycyrrhizin may be of use. Since it is more standardized than ginseng, excess glycyrrhizin will have the same effects as excess cortisol production. Furthermore, it should only be used on a short-term basis for no more than 6 weeks, followed by 2 to 3 weeks of nonuse to ensure that natural cortisol production doesn't atrophy; 25 mg per day is probably a good dose. It should be taken in uneven doses throughout the day with the largest dose in the morning (to mimic cortisol output), a lower dose at noon, and the lowest dose in the early evening.*

Guar gum is a soluble fiber which reduces insulin secretion. Other types of soluble fibers include pectin, oat and barley fiber, and other gums, such as locust bean and acacia. Although not an herb per se, these soluble fibers play an important role in reducing the entry rate of any dietary carbohydrate into the bloodstream, thereby reducing insulin secretion. (On the other hand, insoluble fibers have little, if any, effect on reducing insulin secretion.)

BS pg 280: *Guar gum is a soluble fiber, rich in beta glucan. Other types of soluble fibers include pectin, oat and barley fiber, and other gums, such as locust bean and acacia. Although not an herb per se, these soluble fibers play an important role in reducing the entry rate of any dietary carbohydrate into the bloodstream, thereby reducing insulin secretion. Insoluble fibers have little, if any, effect on reducing insulin secretion.*

A good dose of soluble fiber supplements to reduce insulin secretion and slow deterioration from aging would be 5 grams of soluble fiber about 30 minutes prior to every meal. This would provide 15 grams of soluble fiber per day.

BS pg. 280: *A good dose would be 5 grams of soluble fiber about 30 minutes prior to every meal. This would provide 15 grams of soluble fiber per day.*

Gugulipid reduces triglycerides while raising HDL cholesterol (the 'good' cholesterol) which is one of the tests Dr. Sears says you want to pass on your Age-Free Zone Report Card (See

pages 186-189 of his book *The Age-Free Zone*). *A good dose would be 500 mg of gugulipid taken three times a day.*

BS pg. 280: *A good dose would be 500 mg of gugulipid taken three times a day.*

Genistein. A phytoestrogen derived from the soybean, genistein mimics estrogen. Asian women who eat a lot of soy products have nearly one thousand times the levels of these phytoestrogens in their blood than their Western counterparts do. This is one of the reasons hypothesized why Asian women seem to have fewer postmenopausal problems than Americans, especially osteoporosis, even though they consume virtually deficiency-like levels of calcium (about 300 mg per day).

BS pg. 280: *Genistein is a phytoestrogen derived from the soybean. However, Asian women who eat a lot of soy products have nearly one thousand times the levels of these phytoestrogens in their blood than their Western counterparts do. This is one of the reasons hypothesized why Asian women seem to have less postmenopausal problems than Americans, especially osteoporosis, even though they consume virtually deficiency-like levels of calcium (about 300 mg/day).*

The herbs listed above are by no means meant to be an exhaustive list. However, these herbs can be very useful adjuncts to the Age-Free Zone Lifestyle Pyramid, just like hormonal replacement and the use of vitamins and minerals.

BS pg. 281: *The herbs listed above are by no means meant to be an exhaustive list. However, these herbs can be very useful adjuncts to the Anti-aging Zone Lifestyle Pyramid, just like hormonal replacement and the use of vitamins and minerals.*

In my next and final column on supplements we will explore those supplements deserving of special caveats.

The material for this column has been adapted from *The Age-Free Zone* (formerly *The Anti-Aging Zone*) by Dr. Barry Sears.

By Robert Wayne Johnston - OmniMind Associates . . . for more enjoyable aging

What did you think of this article? Send your comments and questions to:

AgeFreeZone@ZonePerfect.Com

Part Five: Supplements Deserving Special Caveats by Dr. Robert Wayne Johnston

What About Anti-Aging Zone Supplements?

What role do Anti-Aging Zone supplements play in slowing deterioration from aging? Dr. Sears says they have a very important place *only if you have established a sound balanced foundation of hormones through the consistent application of the Age-Free Zone Lifestyle Pyramid* (See page 114 in Dr. Sears' books *The Age-Free Zone* or *The Anti-Aging Zone*).

BS pg. 269 AAZ: *Do supplements have a place in reversing the aging process? Yes, they do but only if they are used after you have established a proper foundation through the consistent application of the Anti-Aging Zone Pyramid.*

[Photocopy of AntiAging Pyramid picture from Barry's Book]

Keeping that important caveat in mind, the supplements in question include hormone replacement (either by prescription or over-the-counter sales), vitamins and minerals that are used in hormone synthesis, and herbs that have hormonal effects.

Scheduled intermittently over the past months, my columns on the subject of Anti-Aging Zone Supplements are organized as follows: Part One: Most Powerful Hormones; Part Two: Over-the-Counter Hormones; Part Three: Vitamins and Minerals; Part Four: Herbs. In addition to the four previously planned, I have added Part Five: Supplements Deserving Special Caveats.

Part Five: Supplements Deserving Special Caveats

One can consume too much or too little of most nutrients in the quest for optimum health, full functioning, and slower aging. Many nutrients, gamma linolenic acid is an example, require consumption within a targeted range to be effective. There are also chemicals found in your drug store, health food store, or grocery store such as extracts of Mexican yams, trans-fatty acids, aspartame, and olestra that should be avoided if you want to effectively abate your body's aging.

Gamma Linolenic Acid (GLA) is a very important nutrient for slowing the universal signs of aging. Yet, for some folks, GLA is potentially dangerous. If too much GLA is consumed, it has the potential for increasing the overproduction of "bad" eicosanoid hormones, which can accelerate one's deterioration from aging.

Most people do not pay close attention to their GLA consumption. If you are taking GLA supplements, be aware that a capsule of borage, black currant, or evening primrose oil contains far too much GLA (45 to 240 mg per capsule) for most people. Biochemist Sears strongly recommends, "If you want to use borage, black currant, or evening primrose oil capsules, find a knowledgeable physician to work with . . . To use GLA without working with a physician who understands its powerful hormonal modulating actions is like lighting a cigarette with a stick of dynamite. You can do it, just be very, very careful."

The safest and most practical way for getting GLA is to eat a bowl of slow-cooked, steel cut oatmeal (instant oatmeal will have much less GLA) one or two mornings a week as part of a Zone breakfast which includes consumption of a moderate amount of fish oil. Note that some bowls accommodate a cup of oatmeal, which equals three blocks of carbohydrates. As to fish oil, the recommended amount per day is six grams. While it can all be taken at once, you may prefer to spread out your dosage. For instance, the amount of fish oil for breakfast could be two grams with one gram each at lunch, late afternoon snack, dinner, and near- bedtime snack, respectively.

Even the amount of GLA suggested above might be too much for some people following the Zone Diet. To get a detailed insight into your current eicosanoid status, you may want to utilize the Eicosanoid Status Report (ESR) described on pages 186 to 189 of either of Dr. Sears' books, *The Age Free Zone* or *The Anti-Aging Zone*.

The ESR will involve you in a self-appraisal of the following variables: daily performance, appetite for carbohydrates, length of time of appetite suppression between meals, fingernail strength or growth, hair strength and texture, stool density, sleeping time, grogginess upon waking, sense of well-being, mental concentration, fatigue, skin condition, flatulence, and

headaches. These variables supply data you can use as a baseline for increasing or reducing your consumption of GLA via oatmeal.

Extracts of Mexican Yams -- Any product containing extracts of Mexican yams is to be avoided. While a laboratory can convert extracts of Mexican yams into steroid hormone precursors, it is impossible for your body to do so.

BS pg 281 AAZ: *Another thing to avoid is any product that contains extracts of Mexican Yams. While you can convert those starting materials in a laboratory into steroid hormone precursors, it is impossible to do so in your body.*

Trans-fatty acids -- Any product in your grocery store (and there are many) which contains trans-fatty acids will disrupt essential fatty acid metabolism, and thereby cause imbalances in your eicosanoid hormones. If you see the phrase, "partially hydrogenated vegetable oil," warns Dr. Sears, "run in the other direction." Also take note that virtually every fast food restaurant uses partially hydrogenated vegetable oils to cook French fries.

BS pg. 281 AAZ: *Any product that contains trans-fatty acids will disrupt essential fatty acid metabolism, and thereby cause eicosanoid imbalances. If you see the phrase, "partially hydrogenated vegetable oils" run in the other direction. Virtually every fast food restaurant uses partially hydrogenated oils to cook French fries.*

Aspartame -- When aspartame breaks down from heat or upon prolonged storage, wood alcohol (methanol) is formed. Unfortunately, when you ingest aspartame, the same methanol is formed in your body -- hardly conducive to slowing aging. Further, if consumed in excess aspartame can set off a chain of biochemical events that can cause nerve death. So there you have it, a dual reason for avoiding aspartame.

BS pg. 281 AAZ: *When aspartame breaks in the heat or upon prolonged storage, methanol (wood alcohol) is formed. Not a very pleasant thing to ingest if you are trying to reverse aging. Unfortunately, when you ingest aspartame, the same methanol is formed in your body. The fact that aspartic acid is an excitatory neurotransmitter that in excess can cause nerve death, this is another good reason to avoid this food additive.*

Olestra -- Olestra is a fake fat which prevents the uptake of carotenoid-based antioxidants. Dr. Barry Sears says, "The jury will be out for the next 20 years on whether inhibition of carotenoid uptake will increase cancer risk." If you want to join this ongoing human experiment as an unpaid guinea pig, then do so at your own risk.

BS pg. 282 AAZ: *...olestra. This fake fat prevents the uptake of carotenoid-based antioxidants. The jury will be out for the next 20 years on whether inhibition of carotenoid uptake will increase cancer risk. If you would like to join this ongoing human experiment as an unpaid guinea pig, then try to consume as many products as possible that contain this fake fat.*

In summary, the general purpose of this five-part series presented over the past few weeks has been to provide an overview of supplements complementary to the Age Free Zone

Lifestyle Pyramid. It makes great sense to add many of these supplements to your age-reversal program. Others substances may detract from it.

BS pg. 282 AAZ: *What I have tried to do in this chapter is to give a balanced overview to supplements complementary to the Anti-aging Zone Lifestyle Pyramid. Many of these make sense to add to your baseline age-reversal program. Others may detract from it.*

In the final analysis, the way to tell if a supplement is helping or hurting your efforts to achieve your Age Free Zone objectives *is to listen to your body and pay close attention to what it is trying to tell you.*

BS pg. 282 AAZ: *The best way to tell is to listen to your body and pay close attention to the dialog that it is continually trying to carry on with you.*

The material for this column has been adapted from *The Age-Free Zone* (Formerly *The Anti-Aging Zone*) by Dr. Barry Sears.

Robert Wayne Johnston - OmniMind Associates . . . for more enjoyable aging

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re: Sears Labs

Hi cmcintosh,

If you click on "about us" in the left-side toolbar, and then click on "website mission" after the page loads, it says right in the website mission:

"Make no mistake; this is the only website where my staff and I can be reached, and we are not associated with any other companies or websites. In other words, if you want the straight scoop, drsears.com is your Zone cyber destination."

So I think the difference is that the Sears Labs products will be produced and endorsed by Dr. Sears, whereas he claims no affiliation with Zone Perfect.

--zg

>I am confused- does this mean that he does not endorse the Zone Perfect Club and the Zone products now available?
How will the products offered from the Sears lab differ from Zone products now available?

From: zonegrl
on: 07/19/2001 at: 02:15 PM

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